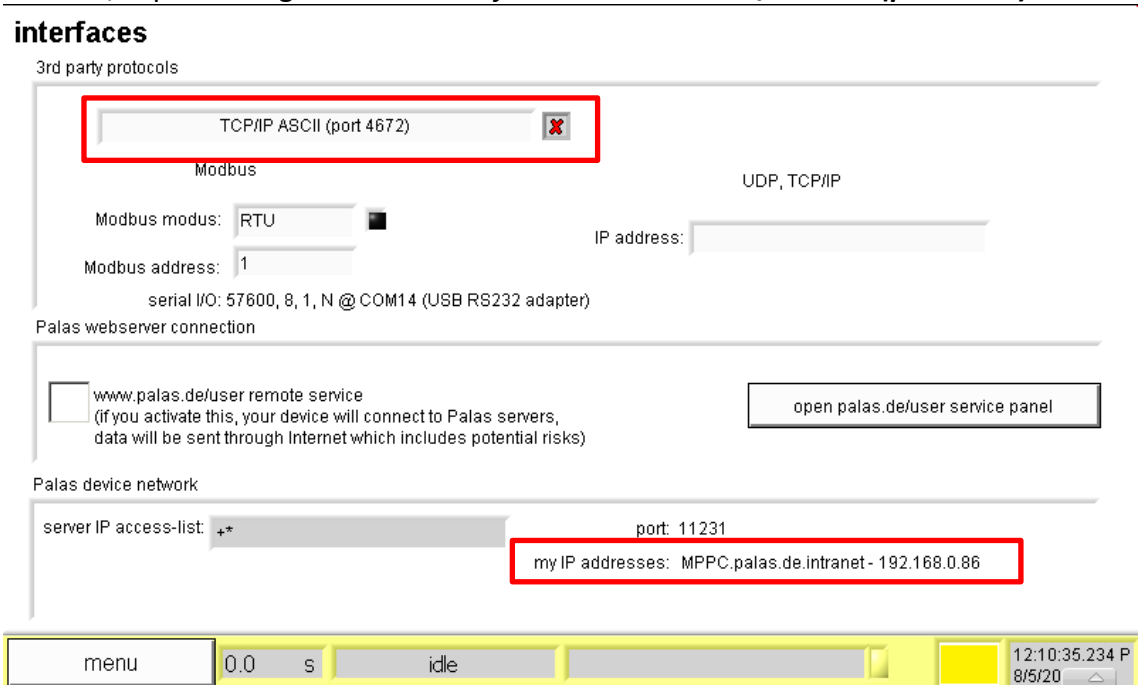
PALAS GmbH
Partikel- und Lasermesstechnik
Greschbachstr. 3b
76229 Karlsruhe
Phone +49 (0)721 96213-0
Fax +49 (0)721 96213-33
mail@palas.de
www.palas.de

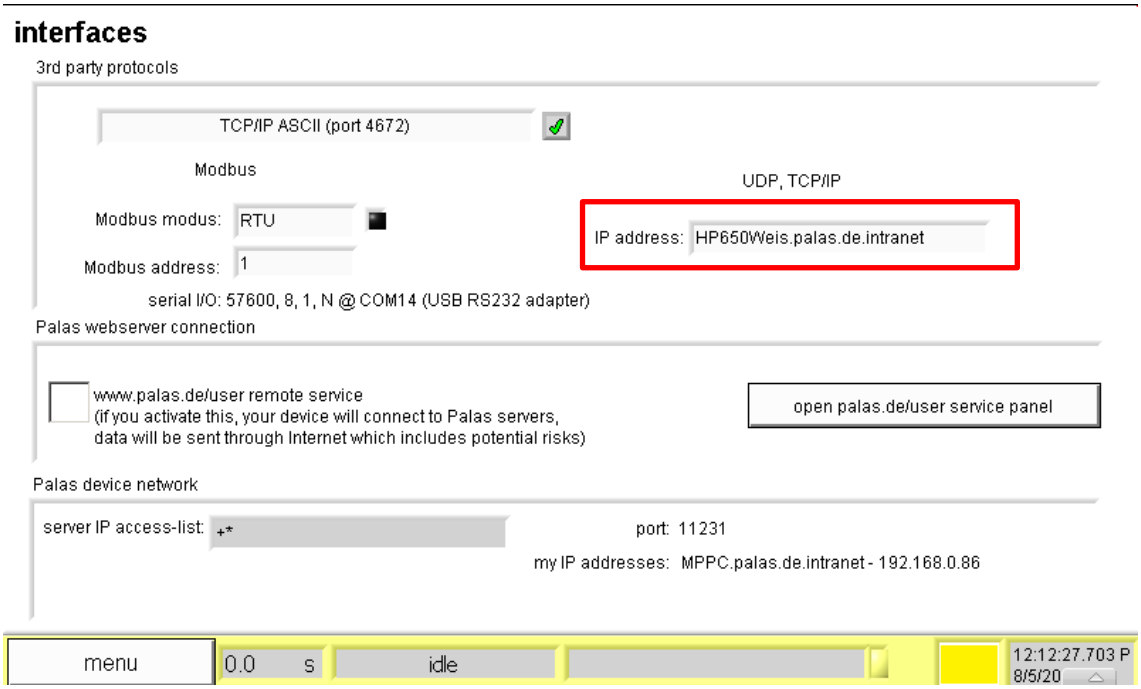
TCP/IP ASCII protocol for Fidas/Promo/UF-CPC

Prerequisite for the functionalities described here:
Firmware version 100526 or higher

To activate TCP/IP protocol: go to menu *interfaces* and select ***TCP/IP ASCII (port 4672)***:



The external program/server should connect to the IP address of the control unit.
This IP address is shown under ***my IP addresses:*** 192.168.0.86 (shown in the example on the screenshot).
Once the connection with an external program/PC is established, a green check mark will appear, and the ***IP address*** of the connected PC/server will be displayed (HP650Weis.palas.de.intranet in the example shown below).



getVal and **sendVal** commands can be used to enable communication via TCP/IP ASCII protocol. Multiple channels can be used within one command.

Examples:

Server / data logger asks for the values of channels 60, 61 and 62:

<getVal60;61;62>\r\n

Palas device answers:

<sendVal\s60=1373.361084;61=0.083834;62=0.116399>7C\r\n

Server / data logger sends command to change the time:

<sendVal203=11:11:00>\r\n

Palas device answers:

<ok>06\r\n or <fail>00\r\n in case a failure occurred

Palas devices provide the following data channels by request	
0	status bit sensor flow
1	status bit coincidence
2	status bit suction pumps
3	status bit weather station
4	status bit IADS
5	status bit estimated raw channel deviation
6	status bit LED temperature
7	status bit operating modus
20	velocity [m/s]
21	coincidence [%]
22	modus
23	suction pump output [%]
24	IADS temperature (Fidas) evaporation unit (UF-CPC), sensor #1 (Promo) [°C]
25	estimated raw channel deviation [channels]
26	LED temperature [°C]
27	flow rate [l/min]
28	Cn for UF-CPC [P/cm³] (count and nephelometer modus)
29	x50 droplet diameter (UF-CPC) [µm]
30	temperature of condensation unit (UF-CPC), sensor #2 (Promo) [°C]

Palas devices provide the following data channels by request	
40	temperature [°C]
41	relative humidity [%]
42	wind speed [km/h]
43	wind direction [°]
44	precipitation intensity [l/m²/h]
45	precipitation type
46	temperature dew point [°C]
47	air pressure [hPa]
48	wind signal quality [%]
Fidas/Promo only:	
52	$PM_{2.5}$ [mg/m³] – 1 s average
53	PM_{10} [mg/m³] – 1 s average
54	PM_{1} [mg/m³] – 10 s average
55	$PM_{2.5}$ [mg/m³] – 10 s average
56	PM_{10} [mg/m³] – 10 s average
57	PM_{tot} [mg/m³] – 10 s average
58	$PM_{2.5}$ [mg/m³] – 60 s average
59	PM_{10} [mg/m³] – 60 s average
60	Cn [P/cm³] (PM averaging interval, default: 900s)
61	PM_{1} [mg/m³]
62	$PM_{2.5}$ [mg/m³]
63	PM_{4} [mg/m³]
64	PM_{10} [mg/m³]
65	PM_{total} [mg/m³]
66-109	further PM values [mg/m³] (different algorithms)
110ff	ΔCn [P/cm³] size distribution with size intervals as shown by the device under Expert User Mode / Particle Size Distribution / Table (10 s average)

To set parameters the following channels are available

Command: sendValXXX=XXX; see example for correct syntax

Palas devices can interpret received channel data as follows	
123	temperature [°C]
124	pressure [hPa]
125	rel. humidity [%]
126	setpoint for temperature controller #1 (Promo) or evaporation unit (UF-CPC) [°C] (since v100413)
127	setpoint for temperature controller #2 (Promo) or condensation unit (UF-CPC) [°C] (since v100413)
128	setpoint aerosol flowrate [l/min] (since v100413)
200	writing “1” to this value will restart the device
201	1=switch to auto modus, 3=switch to idle modus, 4=switch to calib modus
202	averaging interval for PM-values [s]
203	Set time on Control unit, e.g. to reset time to 14:30:25 sendVal203=14:30:25; sendVal203=hh:mm:ss;
204	selected sensor/calibration